Many in full song. A nest with young was shown me in the small club house near the golf course.

93. Worthington's Marsh Wren (*Telmatodytes palustris griseus*).
Heard singing in the marshes daily.

94. Brown-headed Nuthatch (*Sitta pusilla*).
Only three observed. Probably common and breeding in the pine woods.

95. Blue-gray Gnatcatcher (*Polioptila cærulea cærulea*).
Often seen and heard.

96. Robin (*Planesticus migratorius migratorius*).
Only one was seen. This was on the morning of May 6. Does not breed here.

97. Bluebird (*Sialia sialis sialis*).
Common in the more open areas. One nest noted.

A MILD WINTER AND ITS EFFECTS ON THE MIGRATION OF BIRDS AT CHICAGO

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RIVER FOREST, ILLINOIS

The winter of 1920-21 was a memorable one for its mildness, not only for Chicago and vicinity, with which the writer is concerned, but for nearly the whole continent. Those members of the Wilson Club who attended the last meeting at Chicago will perhaps mentally put a question mark behind the statement, as regards Chicago at least, for they found the weather decidedly boreal during the last days of December, reaching —4° on the 28th, and plenty of snow too. But that was about the only real wintry spell we had. Lest anyone suspect the writer of undue meteorological enthusiasm or a too lively imagination along weather lines, let me quote from the official monthly summaries of the Chicago bureau. To go back as far as October 1920: "The mean temperature for the month, 61.9°, was the highest October mean recorded since the station was established in 1871. Mild weather was continuous from the 3rd to the 27th. Precipitation was about three-fifths of the normal. Sunshine was above the normal." "As a whole, November was mild with only light precipitation. The mean temperature, 40.20°, was 1° above normal." "In December moderate temperature prevailed throughout the first half of the month, etc. The maximum was 62° on the 3rd, the minimum was —4° on the 28th. No severe storms occurred, with the exception of a period extending from the 13th to the 15th." "January, as a whole, was mild and dry, with no severe storms. Aside from one moder-

ately cold period, 12th to 17th inclusive, every day was above the seasonable average in temperature, the excess ranging from 15° to 26° in nine days. The total precipitation, amounting to 0.97 inch was less than one-half, and the total snowfall, 3.2 inches, less than one-third of the normal. There was an unusually large amount of sunshine, 100 per cent of the possible amount being recorded on seven days." "In February mild, dry weather prevailed during most of the month. The mean temperature, 33.4°, was 8° above normal, and this was the sixth successive month with a mean temperature abnormally high. The absolute maximum of 66° on the 15th exceeds all previous February records. The small snowfall of the entire winter to February 28th, 9.4 inches, likewise breaks all previous records." "March, 1921, with a mean of 45.8°, exceeded all previous records with the single exception of 1910, while the maximum of 68° on the 5th is the highest ever recorded at Chicago so early in the season. Vegetation made rapid advancement until the 28th, when growth was checked by a freeze which injured tender plants." "April is the eighth consecutive month with abnormally high temperatures. However, unseasonably low temperatures prevailed on the 10th - 11th and 16th - 17th, with frosts and freezes, causing much damage to fruit and tender plants." Finally May: "As a whole May, 1921, was warm and dry. However, rather cool weather prevailed at the beginning and the middle of the month, with light frost on the 16th, followed by unseasonably high temperatures during the remainder of the month. The highest temperatures of record for so early in the season were registered on the 23rd and 24th. This is the ninth consecutive month with high mean temperature, the average daily excess from September 1, 1920, to May 31, 1921, being 6.6°. The total precipitation, 0.80 inch, was the least on record for May at Chicago." Accordingly, fall, winter, and spring were abnormally mild or warm, dry and lacking in the usual storms or gales which have earned for Chicago its well-known sobriquet "windy city." There was also more than the usual sunshine, but all this was interfered with in April and May by alternate unseasonably cool or cold and warm or hot weather, which then retarded the migration of some species, or otherwise interfered with it, broke it up more or less.

As a consequence of all this, one would expect large numbers of our hardy summer residents, such as Robin, Flicker, Killdeer,

Meadowlark and Blackbird, to remain in large numbers or even in numbers of large flocks in the case of some, or at least the successors of the same species from farther north. But that was not the case to any large extent, at least not in the immediate locality of the writer, River Forest, a western suburb of the metropolis. Or one would expect the hardy migrants such as Junco, Tree, Fox and White-throated Sparrows, also Brown Creeper, White-breasted Nuthatch and Chickadee to do so. But that again was not true to any striking degree. A few odd Flickers stayed in the neighborhood all winter, a few Creepers, too, which also happens other winters, and there were more Meadowlarks and Robins remaining all winter a few miles south than usual, but nothing striking. This would lend color to the theory of some that length of day is what prompts birds to leave or come, irrespective of temperature. At Ft. Wayne, Ind., however, I was told that Blackbirds of several species remained in large flocks all winter. In this vicinity, in Thatcher's woods, well known to people hereabout, a few Song Sparrows and Fox Sparrows lingered all winter, while Juncos and Tree Sparrows were slightly more in evidence than usually. The case of the Song Sparrow is a peculiar one. This species figured in more lists and more northerly ones in the Christmas bird census published in "Bird Lore" than ever before. Out of 78 lists from Canada, the New England states, New York, Michigan, Wisconsin and Minnesota, the Song Sparrow is given in 39, and from as far north as the Ottawa River, where the writer, during six years' residence, never found it in winter. On the other hand, in the same Thatcher's Woods there were hardly any Blue Jays in this mild winter, which usually stay there in some numbers. But a Black-crowned Night Heron was tempted to stay till January 4th at Beach, about 30 miles north of Chicago, also a Lincoln's Sparrow tarried there to December 26th. A pair of Bluebirds seems to have wintered in the Sand Dunes, as they were seen there January 22nd.

An unexpected occurrence was that of the Arctic Three-toed Woodpecker. The first ones were noted as early as October, despite the unseasonable warmth. About fifteen specimens were reported from the city and suburbs. The writer saw three on one day, November 26th, at Millers, Indiana.

However, what was the effect of the mildness of the season on the first spring migrants? That is what we want to get at. To get at this I drew out of my records the date of first arrival

for the following six species, who always announce their coming to the writer's home and its immediate vicinity in no uncertain tones:

Species	No. of Yrs.	First Arrival	Arrival in 1921
Meadowlark	9	March 13	February 14
Killdeer	7	March 13	March 2
Bluebird	6	March 4	February 16
Robin	8	March 6	February 5
Song Sparrow	9	March 9	February 20
Flicker	9	March 22	March 11

This makes the Meadowlark 27 days earlier than usual, the Killdeer 11 days, the Bluebird 16 days, the Robin 29 days, the Song Sparrow 17 days, and the Flicker 11 days, an average of 17 days. Of course, there is a factor of uncertainty as a margin of error entering into this, especially in the Robin and Song Sparrow, which in 1921 may have been some of those winter residents from a couple of miles south in our region. At any rate, the first migrants came notably earlier than usual. This must be put down to the influence of the mild season.

However, when we look at the winter range of these and similar species, as the Blackbirds, Sparrow Hawks, etc., we see at once that it does not mean much, because all these winter in the region immediately adjoining ours on the south, or at least between that and our Gulf coast. We can easily see how certain weather conditions obtaining in a relatively large area of the country can and probably do influence them in their movements. This has been shown over and over again by competent observers.

What about the spring migration of those species wintering in Central and South America? Is their coming influenced by weather conditions so near to their breeding grounds? Certainly not. This is also borne out by this year's records. While e.g. species of warblers, as the Myrtle and Palm, spending the winter in our Gulf states, also came unusually early, April 8th, in the case of the former, the warblers from South America came no earlier than usual, although one abnormality should be noted here, that of a Bay-breasted Warbler, which I saw April 30th, with some Black and White Warblers, not even Yellow Warblers being seen that day. The Kingbird, Bobolink, and Baltimore Oriole, due here about May 1st, were this year seen a week or more later, May 7th, in the case of the Bobolink, and May

13th for the Kingbird. This shows that when raw, cold or stormy weather prevails here in April or May, it will retard the migration of species having wintered in South America, but already landed on our Gulf coast in their northward migration, and the most important part of the migration, that of May, becomes normal again.

An unsuspected consequence of the mildness of the season was the shift of the breeding range of at least one southerly species northward. This is the Tufted Titmouse. It breeds commonly 30 miles to the south, and even at Riverside, five miles away. I had seen it once or twice in our woods, but only at the end of the winter, never later. This last winter about four pairs took possession of Thatcher's Woods and made it melodious at once. Later, in April, I saw them inspect knot holes in trees, and they remained, following the Cardinal, which has moved in within the last ten years.

July, 1921.

BIRDS SEEN AT THE MOUTH OF THE OHIO RIVER

BY GORDON WILSON

STATE NORMAL SCHOOL, BOWLING GREEN, KY.

For several years I have spent a week or more of my vacation, some time between July 27 and September 15, at Wickliffe, Kentucky, which is located near the junction of the Ohio and Mississippi Rivers and nearly opposite to Cairo, Illinois. Six miles above the town, which is located on the first bluffs below the mouth of the Ohio, stretches the great bottom. No levees have been built here and the bottom is still rather wild. Only a few hundred of the four or five thousand acres in this tract are in cultivation. The rest of the bottom is covered with open woods, marshes, and lakes. Some thirty-five lakes are of sufficient importance to have been named and there are many more which are almost or wholly dry late in the season. One of the most notable of these marshes is Swan Pond, some 500 acres in extent, which is covered with duck-weeds and water-lilies. Most of the lakes are bordered with tangles of elbow shrubs, while cypress knees and duck-weeds often extend far out into the water. After the fall rains set in, the bottom is almost inaccessible, but in the summer and fall it is a great pleasure ground. The ponds are still full of fish, for every winter they are restocked by the annual overflow of the rivers.